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(1) a 5-6 membered heterocyclic ring system having 1-3 ring heteroatoms, in which the heteroatom is a nitrogen atom, which is substituted with a hydrogen atom, C₁-C₆ alkyl, (CH₂)_mCO₂H or (CH₂)_mCO₂(C₁-C₆ alkyl) and the carbon atom of the heterocyclic ring system may be substituted with an oxygen atom to form a carbonyl or enolate anion and m is an integer ranging from 0-4;

(2) a 5-6 membered carbocyclic moiety substituted with a hydrogen atom or a C₁-C₆ alkyl group wherein a carbon atom of the alkyl group may be substituted with oxygen to form a carbonyl or enolate anion;

(3) a quinoline or isoquinoline group wherein the nitrogen atom is directly bonded to the carbocyclic moiety of formula I;

(4) N,N-bisaryl or bis(C₁-C₆ alkyl) or bisaryl(C₁-C₆ alkyl) amine wherein the aryl group is a naphthyl or phenyl group which is unsubstituted or substituted with a fluorine atom, bromine atom, chlorine atom, OCH₃, CF₃, OH, or C₁-C₆ alkyl;

(5) a heterocyclic ring system having at least one nitrogen atom bonded directly to the carbocyclic ring of formula I and a group Z which is a carbon atom, NR⁸, oxygen atom or sulfur atom wherein R⁸ is a hydrogen atom, C₁-C₆ alkyl, CO₂H or CO₂C₁-C₆ alkyl;

substituent D₁ is a 9-15 membered heterocyclic system comprising a heteroaryl ring system having at least one heteroatom group (U) which is an NR³ group, oxygen atom, sulfur atom or PR³ group which is directly bonded to the aryl portion of the heteroaryl ring system and wherein R³ is a C₁-C₆ alkyl which may be unsubstituted or substituted with CO₂H, SO₃H or salts thereof and wherein the aryl ring may be unsubstituted or substituted with OCH₃, CF₃, bromine atom, chlorine atom, fluorine atom, C₁-C₆ alkyl or OH or a fused ring polycyclic heterocyclic system;

substituent D₂ has the identical heterocyclic system as substituent D₁ except that when U is NR³, the nitrogen atom is quaternized to form an amine salt which is neutralized by an enolate anion from A when A is a substituted pyrimidine like moiety or by a

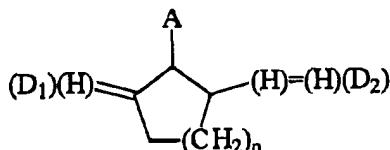
discrete (non intra-molecular) anion, provided that the discrete (non intra-molecular) anion is not a borate anion;

n is an integer ranging from 1-2;

- (b) a hexaarylbiimidazole compound as photoinitiator;
- (c) a photopolymerizable material and a chain transfer agent, or, instead of (c),
- (d) a photoimageable dye.

2. (Amended) A photopolymerizable element comprising:

- (a) a support,
- (b) a photopolymerizable composition comprising
 - (i) a near infrared dye photochemical sensitizer that enables the photopolymerizable composition to undergo effective photopolymerization upon exposure to near infrared radiation, the near infrared dye is a compound of formula I:



wherein A is:

- (1) a 5-6 membered heterocyclic ring system having 1-3 ring heteroatoms, in which the heteroatom is a nitrogen atom which is substituted with a hydrogen atom, C₁-C₆ alkyl, (CH₂)_mCO₂H or (CH₂)_mCO₂(C₁-C₆ alkyl) and the carbon atom of the heterocyclic ring system may be substituted with an oxygen atom to form a carbonyl or enolate anion and m is 0-4;
- (2) a 5-6 membered carbocyclic moiety substituted with hydrogen atom, C₁-C₆ alkyl group wherein the carbon atom of the alkyl group may be substituted with oxygen to form a carbonyl or enolate anion;
- (3) quinoline or isoquinoline groups wherein the nitrogen atom is directly bonded to the carbocyclic moiety of formula I;
- (4) N,N-bisaryl or bis(C₁-C₆ alkyl) or bisaryl(C₁-C₆ alkyl) amine wherein the aryl group is a napthyl or phenyl group which is unsubstituted or substituted with fluorine atom, bromine atom, chlorine atom, OCH₃, CF₃, OH, C₁-C₆ alkyl;

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(5) a heterocyclic ring system having at least one nitrogen atom bonded directly to the carbocyclic ring of formula I and a group Z which is a carbon atom, NR⁸, oxygen atom, or sulfur atom wherein R⁸ is a hydrogen atom, C₁-C₆ alkyl, CO₂H or CO₂C₁-C₆ alkyl;

substituent D₁ is a 9-15 membered heterocyclic system comprising a heteroaryl ring having at least one heteroatom group (U) which is an NR³ group, oxygen atom, sulfur atom, or PR³ group which is directly bonded to the aryl portion of the heteroaryl ring system and wherein R³ is a C₁-C₆ alkyl which may be unsubstituted or substituted with CO₂H, SO₃H or salts thereof and wherein the aryl ring may be unsubstituted or substituted with OCH₃, CF₃, bromine atom, chlorine atom, fluorine atom, C₁-C₆ alkyl or OH or a fused ring polycyclic heterocyclic system;

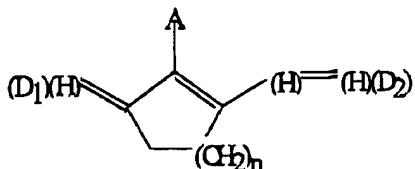
substituent D₂ has the identical heterocyclic system as substituent D₁ except that when U is NR₃, the nitrogen atom is quaternized to form an amine salt which is neutralized by an enolate anion from A when A is a substituted pyrimidine like moiety or by a discrete (non intra-molecular) anion, provided that the discrete (non intra-molecular) anion is not a borate anion;

n is an integer ranging from 1-2;

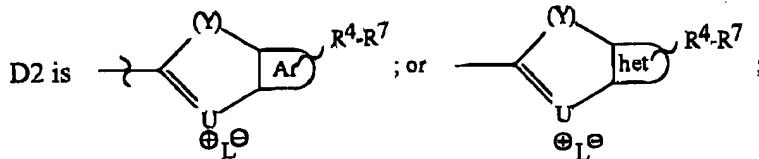
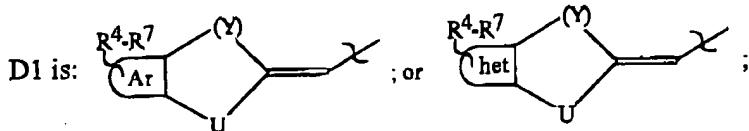
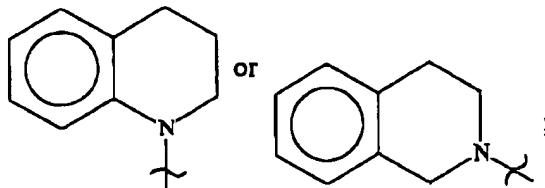
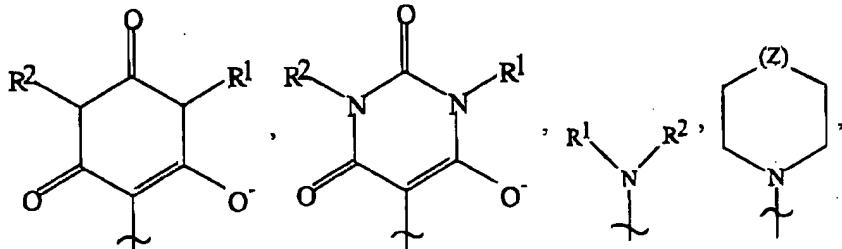
- (c) a hexaarylbiimidazole compound as photoinitiator;
- (d) a photopolymerizable material and a chain transfer agent; and
- (e) a binder polymer.

3. (Amended) A near infrared sensitive composition, comprising:

- (a) a near infrared dye photochemical sensitizer that enables the composition to undergo either
 - (i) effective photopolymerization or
 - (ii) effective photoimaging upon exposure to near infrared radiation,
 the near infrared dye is a compound of formula I:



wherein substituent A is



R^1 or R^2 are independently selected from H, C_1-C_6 alkyl; or
aryl wherein aryl is phenyl or napthyl which may be unsubstituted or substituted
with halogen, $-O(C_1-C_6$ alkyl), $-Oaryl$, aryl or CF_3 ;
 $(C_1-C_6$ alkyl) $(C_6-C_{10}$ aryl);

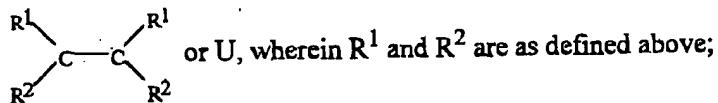
Ar is an aromatic ring chosen from phenyl or napthyl;

het is a heteroaryl ring chosen from benzopyrazine, benzo-1,4-oxazine

or benzo-1,4-thiazine.

U is selected from NR^3 , S, PR^3 or O;

Y is selected from $C(R^1)(R^2)$;



R^3 is selected from C_1-C_6 alkyl unsubstituted or substituted with CO_2H , SO_3H or
salts thereof;

R^4-R^7 are independently chosen from H, OCH_3 , CF_3 , halogen;

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Z is chosen from NR⁸, C, O or S;
 R⁸ is chosen from H, C₁-C₆ alkyl, (CH₂)_mCO₂H or (CH₂)_mCO₂(C₁-C₆ alkyl);

and

m is 0-6;

n is 1-2;

provided that when A contains an enolate anion, a counterion L[⊖] is not present;

(b) a hexaarylbimidazole compound as photoinitiator;

(c) a photopolymerizable material and a chain transfer agent; or, instead of (c),

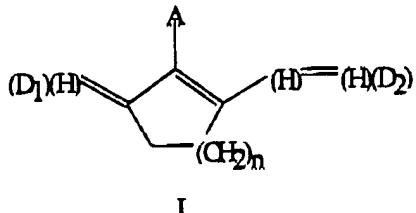
(d) a photoimageable dye.

4. (Amended) A photopolymerizable element comprising:

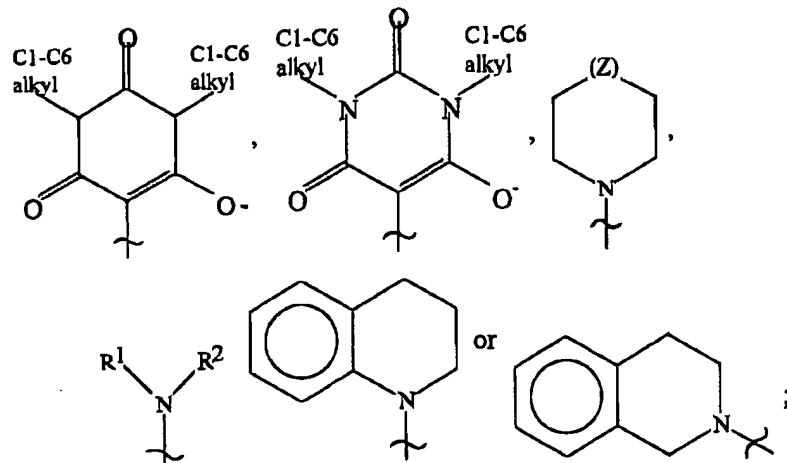
(a) a support;

(b) a photopolymerizable composition comprising

(i) a near infrared dye photochemical sensitizer that enables the photopolymerizable composition to undergo effective photopolymerization upon exposure to neared infrared radiation, the near infrared dye is a compound of formula I:

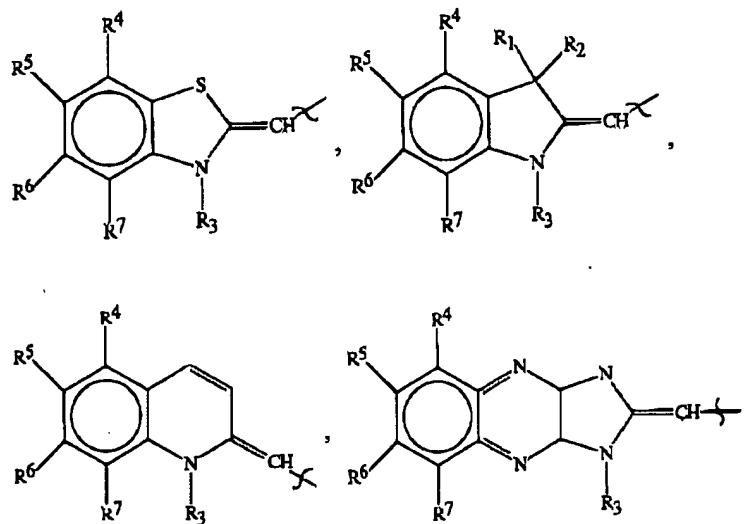


wherein A is

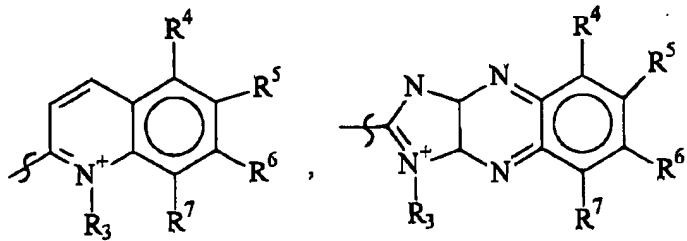
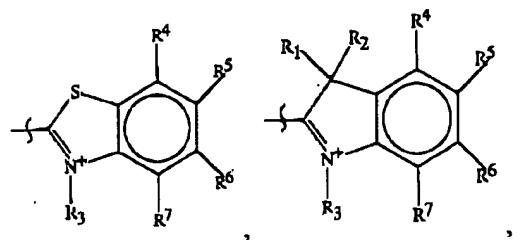
D₁ represents a heterocyclic ring structure selected from the group consisting of:

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D₂ represents a heterocyclic ring structure selected from the group consisting of



R¹ or R² are independently selected from:

C₁-C₆ alkyl, aryl wherein aryl is phenyl or napthyl which may be unsubstituted or substituted with halogen, -O(C₁-C₆ alkyl), Oaryl, aryl or CF₃, (C₁-C₆ alkyl) aryl or hydrogen;

R₃ is C₁-C₆ alkyl, C₁-C₆ alkylsulfonate, C₁-C₆ alkyloxycarbonyl, C₁-C₆ alkyl, or C₁-C₆ alkylcarboxy;

Z is selected from NR⁸, C, O or S wherein R⁸ is H, C₁-C₆ alkyl, CO₂H or CO₂(C₁-C₆ alkyl);

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R^4 - R^7 are independently selected from H, OCH_3 , CF_3 ; or any two of R^4 - R^7 which when ortho substituents may join to form a phenyl ring; n is an integer ranging from 1-2 with the proviso that D_2 is selected to be the quaternized heterocyclic ring structure that corresponds to D_1 such that D_1 and D_2 together form a pair of heterocyclic ring structures;

(c) a hexaarylbiimidazole compound as photoinitiator;
(d) a photopolymerizable material and a chain transfer agent; and
(e) a binder polymer.

5. (Amended) A near infrared sensitive composition, comprising:

(a) a near infrared dye photochemical sensitizer that enables the composition to undergo either

(i) effective photopolymerization or
(ii) effective photoimaging upon exposure

to near infrared radiation wherein the near infrared dye is selected from the group consisting of DF-1413, DF-1419, DF-1422, DF-1429, DF-1668, DF-15118, DF-15131, DF-15132, NK-3877, GW-826, GW-436, GW-776, GW-976, and NK-2268;

(b) a hexaarylbiimidazole compound selected from the group consisting of o-Cl-HABI, CDM-HABI, 2,3,5-TCl-HABI, and TCTM-HABI; and
(c) a photopolymerizable material selected from the group consisting of tripropylene glycol diacrylate, trimethylolpropane triacrylate, ethoxylated trimethylolpropane triacrylate, propoxylated trimethylolpropane triacrylate, ethoxylated Bisphenol A dimethacrylate, and triethylene glycol dimethacrylate, and a chain transfer agent selected from the group consisting of N-phenylglycine, julolidine, 2-mercaptopbenzoxazole, 2,6-diisopropyl-N,N-dimethylaniline, a borate salt and an organic thiol.

7. (Amended) The composition according to Claim 3, wherein the near infrared dye is selected from the group consisting of DF-1413, DF-1419, DF-1422, DF-1429, DF-1668, DF-15118, DF-15131, DF-15132, NK-3877, GW-826, GW-436, GW-776, GW-976, and NK-2268; the hexaarylbiimidazole compound is selected from the group consisting of o-Cl-HABI, CDM-HABI, 2,3,5-TCl-HABI, and TCTM-HABI; wherein the photopolymerizable material is selected from the group consisting of tripropylene glycol diacrylate, trimethylolpropane triacrylate, ethoxylated trimethylolpropane triacrylate, propoxylated trimethylolpropane triacrylate, ethoxylated Bisphenol A dimethacrylate, and triethylene glycol dimethacrylate, and the chain transfer agent is selected from the group consisting of N-phenylglycine, julolidine, 2-mercaptopbenzoxazole, 2,6-diisopropyl-N,N-